

Attorney Docket No. 010379

10/057,441

PENDING CLAIMS AS AMENDED

Please amend the claims as follows:

1. (Currently Amended) A system for determining signal time of arrival in a wireless communication system, comprising:

a searcher operable to analyze received signals to determine a correlation signal level at predetermined points in time, the searcher determining a maximum signal level at a selected one of the predetermined points in time; and

a modeling processor operable to generate a second order polynomial mathematical model of a predetermined response function using the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time, the modeling processor using the mathematical model to determine a time associated with a peak correlation signal level.

2. (Original) The system of claim 1 wherein the correlation signal levels are based on received signal strength of the received signals.

3. (Original) The system of claim 1 wherein the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time are used to determine coefficients in the mathematical model.

4. (Original) The system of claim 3 wherein the coefficients in the mathematical model are used to determine the time associated with a peak value of the mathematical model.

5. (Cancelled)

6. (Original) The system of claim 1 wherein the mathematical model is a second-order mathematical function with three coefficients, the maximum signal level and two

Attorney Docket No. 010379

10/057,441

correlation signal levels from predetermined points in time adjacent the selected time being used to determine the three coefficients in the mathematical model.

7. (Original) The system of claim 1 wherein the mathematical model is a quadratic function having the form: $y(x) = ax^2 + bx + c$.

8. (Original) The system of claim 7 wherein the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time are used to determine coefficients in the mathematical model.

9. (Original) The system of claim 8 wherein the coefficients in the mathematical model are used to determine a time associated with a peak value of the mathematical model.

10. (Currently Amended) A system for determining signal time of arrival in a wireless communication system, comprising:

a searcher operable to analyze received signals to determine a correlation signal level at predetermined points in time, the searcher determining a maximum signal level at a selected one of the predetermined points in time; and

a modeling processor operable to generate an nth order polynomial, n being greater than two, mathematical model of a predetermined response function using the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time, the modeling processor using the mathematical model to determine a time associated with a peak correlation signal level ~~The system of claim 1 wherein the mathematical model is a mathematical function greater than a second order, the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time being used to determine coefficients in the mathematical model.~~

Attorney Docket No. 010379

10/057,441

11. (Currently Amended) A system for determining signal time of arrival in a wireless communication system, comprising:

analysis means for analyzing received signals to determine a correlation signal level at predetermined points in time and for determining a maximum signal level at a selected one of the predetermined points in time; and

modeling means for generating a second-order mathematical model of a predetermined response function using the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time, the mathematical model being used to determine a time associated with a peak correlation signal level.

12. (Original) The system of claim 11 wherein the correlation signal levels are based on received signal strength of the received signals.

13. (Original) The system of claim 11 wherein the modeling means uses the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time to determine coefficients in the mathematical model.

14. (Original) The system of claim 13 wherein the coefficients in the mathematical model are used to determine the time associated with a peak value of the mathematical model.

15. (Cancelled)

16. (Currently Amended) A system for determining signal time of arrival in a wireless communication system, comprising:

analysis means for analyzing received signals to determine a correlation signal level at predetermined points in time and for determining a maximum signal level at a selected one of the predetermined points in time; and

modeling means for generating an nth order mathematical model, n being greater than two, of a predetermined response function using the maximum signal level and correlation

Attorney Docket No. 010379

10/057,441

signal levels from predetermined points in time adjacent the selected time, the mathematical model being used to determine a time associated with a peak correlation signal level ~~The system of claim 11 wherein the modeling means uses a mathematical model greater than a second order.~~

17. (Currently Amended) A method for determining signal time of arrival in a wireless communication system, comprising:

analyzing received signals to determine a correlation signal level at predetermined points in time;

determining a maximum signal level at a selected one of the predetermined points in time;

generating a second order mathematical model of a predetermined response function using the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time; and

using the mathematical model to determine a time associated with a peak correlation signal level.

18. (Original) The method of claim 17 wherein the correlation signal levels are based on received signal strength of the received signals

19. (Original) The method of claim 17 wherein the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time are used to determine coefficients in the mathematical model.

20. (Original) The method of claim 19 wherein the coefficients in the mathematical model are used to determine the time associated with a peak value of the mathematical model.

21. (Cancelled)

Attorney Docket No. 010379

10/057,441

22. (Currently Amended) The method of claim 21 17 wherein coefficients in the second-order mathematical function are used to determine the time associated with a peak value of the mathematical model.

23. (Currently Amended) A method for determining signal time of arrival in a wireless communication system, comprising:

analyzing received signals to determine a correlation signal level at predetermined points in time;

determining a maximum signal level at a selected one of the predetermined points in time;

generating an nth order mathematical model, n being greater than two, of a predetermined response function using the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time; and

using the mathematical model to determine a time associated with a peak correlation signal level ~~The second-order mathematical function of claim 17 wherein the mathematical model is a mathematical function greater than a second order, the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time being used to determine coefficients in the mathematical model.~~